

What is claimed is:

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1. A method for cleaning a glass surface of a surface light or a reflector comprising steps of:

- 5 stopping a truck having a canopy mounted with a cleaning agent blaster, a working robot provided with a blast nozzle and a CCD camera at a front end of a manipulator, and an on-vehicle computer at a specified position in the vicinity of an object to be cleaned, i.e. a surface light, a runway guide light or a reflection mirror;
- 10 operating the manipulator of the robot from an opening floor part, which is freely open-close, provided in the vicinity of the center or the rear part of a load bed of the truck in accordance with instructions from the on-vehicle computer and lowering the blast nozzle toward the object located under the opening floor part;
- 15 recognizing dimensions from positional information through processing by a vehicle-mounted computer based on an image of the object for cleaning taken by the CCD camera, collating the image shape of the object with a stored shape to recognize, and searching positional information of the recognized object
- 20 accordingly; and
- 25 blasting a cleaning agent from the blast nozzle mounted on the front end of the manipulator of the working robot toward the object while measuring and determining the extent of cleaning based on brightness or light intensity of the object cleaned from an image taken by the CCD camera to perform and complete automatic cleaning.

(original)

2. A system for cleaning a glass surface of a surface light or

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a reflector comprising a truck mounted with a cleaning agent blaster, an articulated working robot including a blast nozzle and a CCD camera mounted on a front end of a manipulator, and an operating unit including an on-vehicle computer operable for recognizing dimensions from positional information based on an image of the cleaned object, i.e. a surface light, a runway guide light, or a reflector taken by the CCD camera and for collating the image shape of the object with a stored shape so as to calculate positional information of the object,

wherein an opening floor part which is freely open-close is provided in the vicinity of the center or the rear part of a load bed of the truck for lowering the blast nozzle mounted on the front end of the manipulator toward the object located on the ground and under the load bed in accordance with instructions from the on-vehicle computer;

and wherein a monitor displaying an image taken by the CCD camera for monitoring a cleaned object and a start/stop button for cleaning operation are provided near the driver's seat;

so that after the blast nozzle is lowered, a cleaning agent is blasted from the blast nozzle mounted on the front end of the manipulator of the working robot toward the target object while measuring and determining the extent of cleaning based on brightness or light intensity of the cleaned object from an image taken by the CCD camera to perform and complete automatic cleaning.

*original*  
3. A system for cleaning a glass surface of a surface light or a reflector defined in claim 2 further comprising a driver's aid for directional guidance that is capable of operating a truck

to capture an object to be cleaned at a predetermined position from an image taken by a forward looking CCD camera mounted under the truck, capable of moving the forward looking CCD camera while automatically capturing the object image, and capable of  
5 instructing driving speed and direction of the truck depending on its operation stage.

*(Original)*

4. A system for cleaning a glass surface of a surface light or a reflector defined in claim 2 further comprising an extensible  
10 cornice for preventing dissipation of abrasives provided in such a manner to hang under the periphery of an opening floor part of the load bed of a truck so that the abrasive and its volatilized gas produced after cleaning do not leak outside, wherein the opening floor part is closed and the cornice is folded after  
15 cleaning so that the abrasive and its volatilized gas are sealed within an isolated room in a canopy on the load bed of the truck mounted with a working robot.

*(currently amended)*

5. A system for cleaning a glass surface of a surface light or  
20 a reflector defined in ~~any of claims 2-4~~ claim 2, wherein driving instruction is given by using an image taken by an approach camera provided at the position where an image beneath an opening floor part can be taken, wherein the image can be used as start-up information for the automatic cleaning system which operates on  
25 a manipulator.

*(currently amended)*

6. A system for cleaning a glass surface of a surface light or  
a reflector defined in ~~any of claims 2-5~~ claim 2, wherein transmittancy

or luminous intensity of an object is measured after cleaning to determine if re-cleaning is required or cleaning is completed.

*(currently amended)*

7. A system for cleaning a glass surface of a surface light or a reflector defined in ~~any of claims 2-5~~ claim 2, wherein transmittancy or luminous intensity of an object is stored when the determination of the completion of the cleaning is made, so that the information is used to manage the light of the object.